Rudenko, V. A.

USSR/Chemistry - Plastics

Card 1/1 Pub. 151 - 28/28

Authors : Nazarov, I. N.; Shvekhgeymer, G. A.; and Rudenko, V. A.

Title : Hydrolysis, alcoholysis and hydrogenation of beta-cyanethyl glycol ethers

Periodical : Zhur. ob. khim. 24/2, 329-337, Feb 1954

Abstract : The hydrogenation, hydrolysis and alcoholysis of beta-cyanethyl ethers of ethylene glycol, 1,3-butylene glycol, 1,4-butylene glycol, diethylene glycol and ethylenecyanhydrin were investigated. The obtained homologous diamines dicarboxylic acids and their esters were found to contain oxygen hetero-atoms in their chain and as such are recommended for the derivation of new polyamides of higher hydrophilic nature. The above mentioned diamines, dicarboxylic acids and their esters can also be used in the role of intermediate products for the synthesis of a new type synthetic fiber, plastics and other valuable products. Nine references: 7-USA; 1-USSR and 1-German (1943-1952). Tables.

Institution : Academy of Sciences USSR, Institute of Organic Chemistry

Submitted : June 28, 1953

KUCHEROV, V.F., doktor khim. nauk, sotrudnik, red.; RUDENKO, V.A., sotrudnik, red.; ANDREYEV, V.M., sotrudnik, red.; ONISHCHENKO, A.S., sotrudnik, red.; SEGAL, G.M., sotrudnik, red.; SATAROVA, M.V., red.; GRIBOVA, M.P., tekhn. red.

[Stereochemistry of cyclohexane derivatives; collection of articles] Stereokhimiia proizvodnykh tsiklogeksana; sbornik statei. Moskva, Izd-vo inostr. lit-ry, 1958. 329 p. [Translated from the English and French]. (MIRA 11:11)

1. Institut organicheskoy khimii im. N.D.Zelinskiy AN SSSR (for Kucherov, Rudenko, Andreyev, Onishchenko, Segal).
(Cyclohexane)
(Stereochemistry)

NAZAROV, I.N., akademik, [deceased]; IVANOVA, L.N.; RUDENKO, V.A.

Dehydrogenation of unsymmetrical methylisopropylethylene and its mixtures with tetramethylethylene. Dokl. AN SSSR 122, no. 2:242-245 S '58. (MIRA 11:10)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Dehydrogenation)
(Ethylene)

NOVIKOV, S.S.; BRUSNIKINA, V.M.; RUDENKO, V.A.

Synthesis of some derivatives of 1-benzyl-1, 2, 3-triazole. Izv.AN SSSR Otd.khim.nauk no.3:474-477 Mr '61. (MIRA 14:4)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Triazole)

NOVIKOV, S.S.; RUDENKO, V.A.; BRUSNIKINA, V.M.

Aminotriazoles in the Mannich reaction. Izv.AN SSSR,Otd.khim.nauk no.6:1148-1149 Je '61. (MIRA 14:6)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Triazole)

L 26632-66 EWP(e)/EWT(m)/EWP(t) IJP(c) JD/WB/WH

ACC NR: AP5025339 SOURCE CODE: UR/0126/ 65/020/003/0472/0474

AUTHOR: Bykov, V. N.; Ionov, R. A.; Rudenko, V. A.

ORG: None

TITLE: The structure of thin oxide films on iron-silicon alloy

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 3, 1965, 472-474

TOPIC TAGS: iron base alloy, silicon containing alloy, polycrystalline film, electron diffraction analysis, iron oxide, silicon dioxide

ABSTRACT: The structure of thin oxide films in the range of 1000 Å which form on the surface of iron-silicon have been studied by means of electron diffraction techniques. The alloys used in this experiment contained from 1 to 5% silicon by weight. The oxide films were formed by heating the polished flat samples in a furnace at 700°C for a period of 3 minutes. The oxide films were stripped from the surface in a solution of iodine-ethyl alcohol. The electron diffraction technique showed that only α-Fe_2O_3 was present on the surface of the sample. The analysis of oxide films formed on the surface of alloys Fe + 4% Si and Fe + 5% Si revealed in addition to α-Fe_2O_3 the presence of α-cristobalite. The electron

Card 1/2 UDC: 542.943

L 26632-66

ACC NR: AP5025339

diffraction technique did not show the presence of α-cristobalite since it apparently exists inside the oxide film close to the surface of the metal. When the separated oxide films were subjected to heating at 1100°C for a period of two hours the silicon oxide was transformed into α-cristobalite with the crystal size of more than 200 Å. On the basis of these findings it can be concluded that the film consists of α-Fe_2O_3 and SiO_2. The SiO_2 is in a form of fine α-cristobalite particles and amorphous SiO_2. In the initial stage of oxidation of alloys containing a high percentage of silicon an SiO_2 layer is formed at the metal interface which slows down the diffusion of iron ions through the oxide layer and thus slows the rate of oxidation. Orig. art. has: 1. fig. and 1 table.

SUB CODE:11,20/ SUBM DATE: 04Sept64/ ORIG REF: 003/ OTH REF: 004

Card 2/2

BYKOV, V.N.; IONOV, R.A.; RUDENKO, V.A.

Structure of thin oxide films on iron-silicon alloys.
Fiz. met. i metalloved. 20 no.3:472-474 S '65.
(MIRA 18:11)

OREKHOV, Aleksandr Pavlovich (1881-1939), akademik; KABACHNIK, M.I., akademik, otv. red.; RUDENKO, V.A., red.

[Intramolecular rearrangements; studies in the field of theoretical organic chemistry] Vnutrimolekuliarnye peregruppirovki; issledovaniia v oblasti teoreticheskoi organicheskoi khimii. Moskva, Nauka, 1965. 310 p.
(MIRA 18:9)

SHENDEROVICH, M.B., LERNER, Yu.S.; RUDENKO, V.A.; KLIMENT'YEV, I.D.; IVLEV, V.A.

Magnesium cast iron castings for agricultural machinery. Lit. proizv. no.1:35 Ja '65. (MIRA 18:3)

KUGATOVA-SHEMYAKINA, G.P.; KUDRYAVTSEV, V.A.; SMIRNOVA, G.P.; GUSCHCHINTSOV, A.I.; MISHUROVSKAYA, L.M.; ARAKISHIYEV, D.A.; PEN'KOV, L.A.; USHAKOVA, V.F.

New growth promoting substances. Dokl. AN SSSR 160 no.4:960-963 F '65. (MIRA 18:2)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR, Institut kartofel'nogo khozyaystva i Institut botaniki AN TurkmSSR. Submitted June 5, 1964.

L 53997-65

ACCESSION NR: AP5017373 UR/0020/65/160/004/0960/0963

AUTHOR: Kugatova-Shemyakina, G. P.; Ushakova, V. F.; Rudenko, V. A.; Smirnova, G. P.; Grechushnikov, A. I.; Mishurovskaya, L. M.; Agakishiyev, D. A.; Pen'kov, L. A.

TITLE: New growth stimulators

SOURCE: AN SSSR. Doklady, v. 160, no. 4, 1965, 960-963

TOPIC TAGS: plant development

Abstract: Compounds from the following groups were synthesized by the authors and found to be highly active as plant growth stimulators: delta-3-cyclohexenyl- and cyclohexylbutanolones, delta-3-cyclohexenylbutenones, cyclohexylbutanes, and cyclohexylbutenones. The authors were particularly interested in determining the relationship between the structure and degree of activity of the compounds. Laboratory and field tests on the potato showed: (1) compounds of the cyclohexene series were more active than the corresponding compounds of the cyclohexane series; (2) the introduction of a methyl group into the ring, especially in position 2 or 6, significantly increased the activity of the compound; (3) the substitution of a phenyl for a methyl group increases the activity even more; (4) the introduction of a second methyl

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L 53997-65

ACCESSION NR: AP5017373

group into the ring not only does not increase the activity of the compound, it may even decrease it; (5) growth stimulation also depends on the spatial structure of the molecule. Orig. art. has 6 tables.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, SSSR); Institut kartofel'nogo khozyaystva, Akademii nauk TurkmSSR (Institute of Potatoe Growing, Academy of Sciences TurkmSSR); Institut botaniki, Akademii nauk TurkmSSR(Institute of Botany, Academy of Sciences TurkmSSR); Institut ovoshchnogo khozyaystva, Akademii nauk TurkmSSR(Institute of Vegetable Growing, Academy of Sciences, TurkmSSR)

SUBMITTED: 02Jun64 ENCL: 00 SUB CODE: LS, OC

NR REF SOV: 004 OTHER: 001 JPRS

Card 2/2

BYKOV, V.N.; RUDENKO, V.A.; ZAKHAROVA, M.I.

Redistribution of dislocations in a molybdenum single crystal during annealing. Fiz. met. i metalloved. 19 no.1:145-147 Ja '65. (MIRA 18:4)

[illegible], Yu.S., inzh.; [illegible], V.A., inzh.; [illegible], A.B., inzh.

Specialized shop for founding magnesium cast iron. Mashinostroenie no. 1:63-65 Ja-F '64.

BRUSNIKINA, V.M.; NOVIKOV, S.S.; RUDENKO, V.A.

Aminotriazoles in the Mannich reaction. Izv. AN SSSR. Ser.khim. no.9:1681-1683 S '63. (MIRA 16:9)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Triazole) (Mannich reaction)

KHAZAN, G.L.; ROMANOVA, L.D.; RUDENKO, V.F.

Vascular skin reaction to cooling in connection with changes in the micro- and macroclimate. Gig. i san. 25 no.4:19-23 Ap '60. (MIRA 13:8)

1. Iz Ukrainskogo instituta gigyeny truda i professional'nykh zabolevaniy.

(SKIN) (COLD--PHYSIOLOGICAL EFFECT)
(BODY TEMPERATURE--REGULATION)

NESTRUGINA, Z.F.; RUDENKO, V.F. (Khar'kov)

Effect of noise from Diesel engines on the auditory function of workers at testing stations. Vrach.delo no.11:114-117 N '62. (MIRA 16:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut gigiyeny truda i professional'nykh zabolevaniy.
(NOISE) (INDUSTRIAL HYGIENE) (HEARING)

SHCHELKUNOV, I. P.; RUDENKO, V. F.; SHEYNIN, B. Ya (Khar'kov)

Changes in the osteoarticular system of chippers and their relationship to working conditions. Gig. truda i prof. zab. no.12:28-34 '61. (MIRA 14:12)

1. Ukrainskiy institut usovershenstvovaniya vrachey, Ukrainskiy institut gigiyeny truda i profzabolevaniy i Medob"yedineniye No. 17.

(VIBRATION--PHYSIOLOGICAL EFFECT)
(BONES--DISEASES) (OCCUPATIONAL DISEASES)

RUDENKO, V.I., inzh.

Calculating the terminal sections of slabs for the thoroughfare part of span structures of bridges without diaphragms. Transp. stroi. 13 no.6:61-63 Je '63. (MIRA 16:9)
(Bridges, Concrete)

FILIMONOVA, Ninel' Lavrent'yevna; RUDENKO, Vladimir Ivanovich; IVANOVSKAYA, K.M., red.; BODANOVA, A.P., tekhn. red.

[Characteristics of the design of slab bridges]Osobennosti proektirovaniia plitnykh mostov. Moskva, Avtotransizdat, 1962. 73 p. (MIRA 15:7)

1. Otdel iskusstvennykh sooruzheniy Gosudarstvennogo Vsesoyuznogo dorozhnogo nauchno-issledovatel'skogo instituta (for Filimonova, Rudenko).
(Bridges, Concrete)

L 04517-67 EWT(1)
ACC NR: AP6033287 SOURCE CODE: UR/0141/66/009/005/0932/0941

AUTHOR: Grigor'yev, Yu. V.; Rudenko, V. K.; Khokhlov, R. V. 51 B

ORG: Moscow State University (Moskovskiy gosudarstvenny universitet)

TITLE: Theory of an optical parametric oscillator 15

SOURCE: IVUZ . Radiofizika, v. 9, no. 5, 1966, 932-941

TOPIC TAGS: nonlinear optics, parametric amplifier, harmonic generation, frequency conversion , resonator

ABSTRACT: Parametric excitation of oscillations in a Fabry-Perot-type resonator which is filled with an optically transparent nonlinear medium with quadratic polarizability was analyzed as a single-mode approximation. Primary attention is given to the behavior of a system when the phase matching of modes interacting in the cavity is disturbed and the resonant and parametric frequencies are dissimilar. A condition for excitation of oscillations is derived and the stationary states and their stability are analyzed. A comparison of parametric oscillations is made for systems with distributed and lumped parameters. Orig. art. has: 7 figures and 26 formulas.

SUB CODE: 20/ SUBM DATE: 17Jan66/ ORIG REF: 009/ OTH REF: 007/ ATD PRESS: 5100

Card 1/1 UDC: 621.373.93:621.378.001:621.372.413

TOKAREVA, M.V.; RUDENKO, V.K.

Reciprocal system consisting of lithium and varium nitrates and chlorides. Zhur.neorg.khim. 8 no.3:704-707 Mr '63. (MIRA 16:4)

1. Luganskiy gosudarstvennyy pedagogicheskiy institut.
(Systems (Chemistry))

[redacted], V.N.; [redacted], V.L.; KHVOSHIN, V.A.

Converting the MPSnchPr-54 device into a high-speed temperature regulator. Priborostroenie no.10:26 O '64.

(MIRA 17:11)

RUDENKO, V.N.

Investigating the toughness of ceramic metal materials. Porosh. met. 2 no.1:68-71 Ja-F '62. (MIRA 15:8)

1. Institut metallokeramiki spetsial'nykh splavov AN UkrSSR.
(Ceramic metals--Testing)

5

PHASE I BOOK EXPLOITATION SOV/6342

Pisarenko, Georgiy Stepanovich, Valeriy Trofimovich Troshchenko, Vsevolod Georgiyevich Timoshenko, Vasiliy Aleksandrovich Kuz'menko, Georgiy Vakhtangovich Isakhanov, Georgiy Nikolayevich Tret'yachenko, Boris Alekseyevich Gryaznov, Nikolay Vasil'yevich Novikov, Vasiliy Nikitich Rudenko, and Rufina Gerasimovna Shumilova

Prochnost' metallokeramicheskikh materialov i splavov pri normal'nykh i vysokikh temperaturakh (Strength of Sintered Materials and Alloys at Room and High Temperatures) Kiyev, Izd-vo Akademii nauk UkrSSR, 1962. 274 p. Errata slip inserted. 2400 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut metallokeramiki i spetsial'nykh splavov.

Resp. Ed.: G. S. Pisarenko, Corresponding Member, Academy of Sciences USSR; Ed.: I. V. Lebedev; Tech. Ed.: Yu. B. Dakhno.

Card 1/12

PURPOSE: The book is intended for engineers, scientific research workers, aspirants, and students concerned with problems of the strength of sintered materials and structural parts.

COVERAGE: The book reviews the results of studying the strength, ductility, and elasticity of materials and structural parts produced by powder-metallurgy methods and presents brief information on these methods. Particular attention is given to methods of experimental investigation of physical and mechanical characteristics of heat-resistant sintered materials with specific properties, and to the description of a number of testing units developed for these investigations. Some problems of the theory of the strength of brittle sintered materials and high-porosity ductile materials are discussed. Laws governing changes in characteristics of strength and elasticity under the effect of various factors are outlined. The appendix includes reference tables with data on the basic mechanical characteristics of a number of sintered materials. The assistance of members of the Powder Metallurgy Institute V. T. Kovpak, Yu. A. Kashtalyan, L. V. Kravchuk, A. P. Yakovlev, V. K. Kharchenko, V. K. Kuz'menko, and V. A. Chebotarev is acknowledged. There are 141 references, mostly Soviet.

RUDENKO, V.N.
ISAKHANOV, G.V.

5

PHASE I BOOK EXPLOITATION SOV/6342

Pisarenko, Georgiy Stepanovich, Valeriy Trofimovich Troshchenko, Vsevolod Georgiyevich Timoshenko, Vasiliy Aleksandrovich Kuz'menko, Georgiy Vakhtangovich Isakhanov, Georgiy Nikolayevich Tret'yachenko, Boris Alekseyevich Gryaznov, Nikolay Vasil'yevich Novikov, Vasiliy Nikitich Rudenko, and Rufina Gerasimovna Shumilova

Prochnost' metallokeramicheskikh materialov i splavov pri normal'nykh i vysokikh temperaturakh (Strength of Sintered Materials and Alloys at Room and High Temperatures) Kiyev, Izd-vo Akademii nauk UkrSSR, 1962. 274 p. Errata slip inserted. 2400 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut metallokeramiki i spetsial'nykh splavov.

Resp. Ed.: G. S. Pisarenko, Corresponding Member, Academy of Sciences USSR; Ed.: I. V. Lebedev; Tech. Ed.: Yu. B. Dakhno.

Card ~~1/9~~ 1/2

PURPOSE: The book is intended for engineers, scientific research workers, aspirants, and students concerned with problems of the strength of sintered materials and structural parts.

COVERAGE: The book reviews the results of studying the strength, ductility, and elasticity of materials and structural parts produced by powder-metallurgy methods and presents brief information on these methods. Particular attention is given to methods of experimental investigation of physical and mechanical characteristics of heat-resistant sintered materials with specific properties, and to the description of a number of testing units developed for these investigations. Some problems of the theory of the strength of brittle sintered materials and high-porosity ductile materials are discussed. Laws governing changes in characteristics of strength and elasticity under the effect of various factors are outlined. The appendix includes reference tables with data on the basic mechanical characteristics of a number of sintered materials. The assistance of members of the Powder Metallurgy Institute V. I. Kovpak, Yu. A. Kashtalyan, L. V. Kravchuk, A. P. Yakovlev, V. K. Kharchenko, V. K. Kuz'menko, and V. A. Chebotarev is acknowledged. There are 141 references, mostly Soviet.

KONONOV, B. A.; RUDENKO, V. N.

Multiple-screen calorimeter for measuring betatron radiation.
Izv. vys. ucheb. zav.; fiz. no.6:147-151 '62.
(MIRA 16:1)

1. Tomskiy politekhnicheskiy institut imeni Kirova.

(Calorimeters) (Radiation—Measurement)

RUDENKO, V.N.

Investigating real strength of heat-resistant ceramic metal materials. Porosh. met. no.4:86-93 Jl-Ag '61. (MIRA 16:5)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.
(Ceramic metals--Testing)
(Metals at high temperature)

RUDENKO, V.N.

Distribution of radiation doses in alkali halide crystals irradiated by an electron beam. Atom. energ. 16 no.2:151-152 F '64. (MIRA 17:3)

RUDENKO, V.N., kand.tekhn.nauk

Unit for determining the stength of cermet iron at low temperatures. Mashinostroenie no. 2:57 Mr-Ap '64. (MIRA 17:5)

ACCESSION NR: AP4029204 S/0226/64/000/002/0032/0039

AUTHOR: Boyko, P. A.; Cryaznov, B. A.; Dubinin, V. P.; Klimenko, V. N.; Kuz'menko, V. A.; Osasyuk, V. V.; Radomyksel'skiy, I. D.; Rudenko, V. N.

TITLE: Investigation of the properties of N32D4 high-alloy nickel-copper powder-metal steel

SOURCE: Poroshkovaya metallurgiya, no. 2, 1964, 32-39

TOPIC TAGS: N32D4 steel, high alloy steel, nickel copper steel, powder metal steel, copper containing alloy, nickel containing alloy

ABSTRACT: The authors investigate subject properties manufactured by two technological variations. It was shown that the higher pressures of the first pressing and temperature of the first sintering raises the density of the manufactured samples only slightly and has little affect on the strength characteristics in static tests. These results are presented in tables and graphs. In dynamic tests (resiliency, ultimate strength) there is a considerable decrease in the strength of the samples manufactured by the second technological variation which is associated with an increased sensitivity of the dynamic strength characteristics of porosity microheterogeneity in composition which is higher in the samples subjected to a first

ACCESSION NR: AP4029204

sintering at low temperature. Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: Institut problem materialovedeniya AN SSSR (Institute of Material Behavior Problems, AN SSSR)

SUBMITTED: 13Sep63 DATE ACQ: 28Apr64 ENCL: 00

SUB CODE: ML NO REF SOV: 005 OTHER: 001

Card 2/2

S/139/62/000/006/022/032
E032/E314

AUTHORS: Kononov, B.A. and Rudenko, V.N.

TITLE: A multiscreen calorimeter for measurements on betatron radiation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 147 - 151

TEXT: A description is given of a two-screen calorimeter (Fig. 1). It consists of a lead absorber 1 suspended on nylon threads 2 inside an isothermal screen 3 . This screen is, in turn, suspended inside a second isothermal screen 4 . The screens are made of 2 mm thick metal foil. The second screen is attached to the lid 6 by perspex rods 5 ; the lid itself is also made of perspex (40 mm thick); the entrance window 7 is made of 0.1 mm thick aluminium foil. The temperature of the absorber is measured by a thermistor. The space inside the calorimeter is evacuated down to 10^{-1} - 10^{-2} mm Hg. Continuous stirring and thermostating was found to be unnecessary and the calorimeter was found to be capable of measuring intensities of 3×10^{-5} -

Card 1/2

TROSHCHENKO, Valeriy Trofimovich, kand. tekhn. nauk; RUDENKO, Vasiliy Nikitich, kand. tekhn. nauk; KOVALEV, K.V., kand. tekhn. nauk, retsenzent

[Strength of ceramic metal materials and methods of determining it] Prochnost' metallokeramicheskikh materialov i metody ee opredeleniia. Kiev, Tekhnika, 1965. 187 p. (MIRA 18:12)

L 20196-66 FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/T/EWP(k)/EWA(h) IJP(c) WG/WH
ACC NR: AP6007025 SOURCE CODE: UR/0051/66/020/002/0370/0371

AUTHOR: Rudenko, V. N.

ORG: none

TITLE: Effect of a laser pulse on the temperature of a medium

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 370-371

TOPIC TAGS: laser emission, ruby laser, laser induced heating

ABSTRACT: The author studies the heating effect of a coherent light beam in various media. It is assumed that a stream of electromagnetic radiation is incident on the boundary of the uniform half-space $0 < x < \infty$. The radiation intensity and characteristics of the medium are known. It is assumed that the portion of energy absorbed is entirely converted to heat. A formula is derived for determining the temperature distribution after completion of a pulse. An approximate expression is given for maximum temperature in opaque media with a high coefficient of absorption. This formula gives a maximum surface temperature of approximately 100°C for a highly polished copper plate exposed to an electromagnetic energy density of 100 joules/cm^{-2} for a pulse of 10^{-3} sec. An expression is derived for maximum temperature in

Card 1/2 UDC: 535.211 : 621.375.9 : 535

materials with poor thermal conductivity and a low coefficient of absorption. Assuming the same energy density and pulse duration, this formula gives maximum temperatures of about 40°C for glass, approximately 25°C for corundum, and about 50°C for quartz. However, quartz may be heated to a considerably greater degree in the infrared region. For instance, at $\lambda = 8.5\mu$, quartz shows reflection and absorption similar to metals, and calculations give a maximum temperature of 700°C for a pulse duration of 10^{-3} sec and an energy density of 100 joules/cm^{-2}. The theoretical data were indirectly confirmed by experiments in using a ruby laser to vaporize a thin silver film on copper. "The author is grateful to S.I. Minakova and V.B. Braginskiy for suggesting the problem and for consultation." Orig. art. has: 4 formulas. [14]

SUB CODE: 20/ SUBM DATE: 05Jul65/ ATD PRESS: 4214

L 22997-66 EWT(m)/EWP(w)/T/EWP(t) IJP(c) JD/JG/GS

ACC NR: AT6008644 SOURCE CODE: UR/0000/65/000/000/0014/0017

AUTHORS: Gorodetskiy, S. S. (Kiev); Rudenko, V. N. (Kiev)

ORG: none

TITLE: Influence of carbonization on the short-term strength of tungsten, molybdenum, and tantalum at high temperatures

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy i dinamicheskoy prochnosti materialov i konstruktsionnykh elementov pri vysokikh i nizkikh temperaturakh, 3d. Termoprochnost' materialov i konstruktsionnykh elementov (Thermal strength of materials and construction elements); materialy soveshchaniya. Kiev, Naukova dumka, 1965, 14-17

TOPIC TAGS: tungsten, tantalum, molybdenum, graphite, tensile strength, pyrometer, dynamometer, mioroscope/ OPPIR-09 pyrometer, OPPIR-017 pyrometer, DS-0.2 dynamometer, MIR-12 microscope

ABSTRACT: This investigation was conducted to determine and to compare the short-term strength of tungsten, molybdenum, and tantalum after these metals were heated in graphite and tungsten heating tubes respectively. The experiments were carried out on an installation developed by the Institute for the Problems of the Science of Materials AN UkrSSR (Institut problem materialovedeniya AN UkrSSR). A schematic of the experimental installation is presented, and the experimental results are shown graphically (see Fig. 1). It was found that the use of graphite heating tubes for heating W, Mo,

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L 22997-66

ACC NR: AT6008644

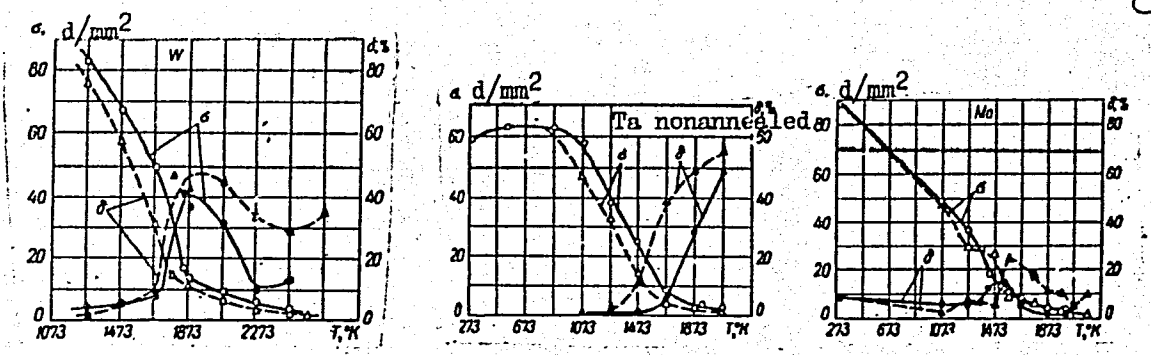


Fig. 1. Dependence of plasticity (δ) and strength (σ) of tungsten, tantalum, and molybdenum after being exposed to high temperatures in graphitic (dashed line) and tungsten (solid line) heating tubes.

and Ta at high temperatures leads to carbonization of the metals and to an increase in plasticity and a decrease in the strength of the metals. It is concluded that graphite heating tubes or crucibles should be employed for testing of the less chemically active metals only. Orig. art. has: 3 graphs.

SUB CODE: 11/ SUBM DATE: 19Aug65/ ORIG REF: 003

Card 2/2

L 22996-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t) IJP(c) JD/HW/GS

ACC NR: AT6008650 SOURCE CODE: UR/0000/65/000/000/0043/0048

AUTHORS: Storozhevskiy, I. M. (Kiev); Rudenko, V. N. (Kiev)

69
B+1

ORG: none

TITLE: Strength studies of metal-ceramic materials at low temperatures

18 18

SOURCE: Vsesoyuznoye soveshchaniye po voprosam staticheskoy i dinamicheskoy prochnosti materialov i konstruktsionnykh elementov pri vysokikh i nizkikh temperaturakh, 3d. Termoprochnost' materialov i konstruktsionnykh elementov (Thermal strength of materials and construction elements); materialy soveshchaniya. Kiev, Naukova dumka, 1965, 43-48

TOPIC TAGS: potentiometer, stress analysis, metal ceramic material, tensile test, test method, low temperature effect, metallurgic testing machine/ 1Kh18N9T steel, 1Kh18N9T steel, PP-1 potentiometer

18 18

ABSTRACT: Experiments are described for testing metal-ceramic materials in tension, compression, shear, and hardness at temperatures from 78 to 293K. The details of four testing facilities are outlined, one for a bending test at low temperatures, one for tension, one for shear, and one for compression. The test chambers in all four facilities are made of 1Kh18N9T stainless steel and are cooled by alcohol (down to 170K) and by liquid nitrogen (to 78K). Temperatures are measured with copper-constantan thermocouples and are monitored by a PP-1 potentiometer. Three sets of

14 10

Card 1/2

L 22996-66

ACC NR: AT6008650

porous iron metal ceramics were used as test specimens. The results show that the strength of the metal increases considerably as the temperature is lowered. The plastic characteristics of the same specimens, on the other hand, deteriorate, especially for the specimens with 5% porosity. Orig. art. has: 6 figures.

SUB CODE: 11, 13/ SUBM DATE: 19Aug65/ ORIG REF: 014/ OTH REF: 004

Card 2/2

L 10466-67 EWT(1)/EEC(k)-2 WR
ACC NR: AP6031045 SOURCE CODE: UR/0146/66/009/004/0116/0120

AUTHOR: Rudenko, V. N.

ORG: Moscow Higher Technical School im. N. E. Bauman (Moskovskoye vysshheye tekhnicheskoye uchilishche)

TITLE: Measuring small periodic displacements by means of an interferometer

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 4, 1966, 116-120

TOPIC TAGS: interferometer, multibeam interferometer

ABSTRACT: An outfit based on Soviet-made IZK-64 (Zender-Mach type) interferometer is described which permits measuring displacements as small as 10^{-8} cm, with a probability of 0.95; measuring time, 10 min. The electronic part of the outfit consists of a photocell (sensitivity, 100 μamp/lm), amplifiers, a linear detector, and in integrator. One of the interference bands is transformed

Card 1/2

UDC: 681.2.535.8

L 10466-67

ACC NR: AP6031045

by lenses in such a way that it uniformly covers the entire surface of the photocathode. Overall amplifier gain, 100000. The techniques of measurements are described. The outfit permitted increasing the interferometer sensitivity, under dynamic conditions, by two orders of magnitude. A yet-further increase in sensitivity is hampered by seismic jolts, convection streams, city noise, etc. Orig. art. has: 1 figure, 6 formulas, and 1 table.

SUB CODE: 20, 09 / SUBM DATE: 09Jul64 / ORIG REF: 009

Card 2/2 egk

L 26592-66 EWT(m)/EWP(e)/EWP(w)/T/EWP(t)/EWP(k) IJP(c) JD

ACC NR: AP6011352 SOURCE CODE: UR/0226/66/000/003/0096/0100

AUTHORS: Rudenko, V. N.; Storozhevskiy, I. M.

ORG: Institute for Materials Behavior Problems, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR) 55 B

TITLE: Investigation of the strength and plasticity of sintered iron during tension in the low-temperature region 18 18 18

SOURCE: Poroshkovaya metallurgiya, no. 3, 1966, 96-100

TOPIC TAGS: iron, iron powder, powder metal, powder metallurgy/ PZhlM1 iron powder, porosity, sintered metal, tensile strength, plasticity, temperature dependence,

ABSTRACT: The effect of porosity and temperature on the strength and plastic properties of sintered iron was investigated. The work supplements the results obtained by A. Ya. Krasovskiy (Poroshkovaya metallurgiya, No. 4, 1, 1964). The specimens were prepared from PZhlM1 iron powder, and their tensile strength and plasticity were determined in the temperature range of 77--293K. The experimental results are shown graphically (see Fig. 1). These results are compared with literature data. The effect of porosity on the strength limit at different temperatures is shown in terms of the dimensionless parameters ρ and η

$$\rho_{\sigma_b} = \frac{(\sigma_b)_T}{(\sigma_b)_{293°}},$$

Card 1/2

2

L 26592-66

ACC NR: AP6011352

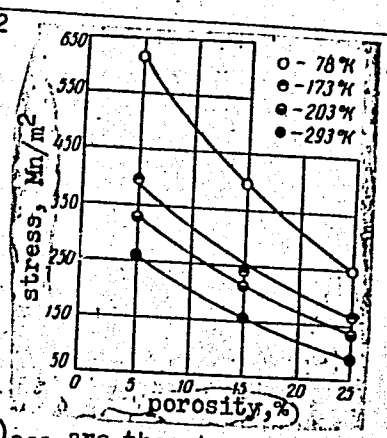


Fig. 1. Effect of porosity on the strength limit of sintered iron at various temperatures.

where $(\sigma_b)_T$ and $(\sigma_b)_{293}$ are the strength limits of the material of given porosity at the temperature T and at 293K respectively. It is concluded that low temperatures have more effect on the strength of iron, the greater porosity of the latter. Orig. art. has: 5 graphs.

SUB CODE: 11,20/ SUBM DATE: 11Jun65/ ORIG REF: 014/ OTH REF: 003

Card 2/2 BLG

L 58322-65 EWT(l)/EWT(m)/EPA(w)-2/T/EWP(t)/EEC(b)-2/EWP(b)/EWA(m)-2 Pab-10/Pt-7/
Pi-4 IJP(c) JD/JG/GG
ACCESSION NR: AP5011392 UR/0139/65/000/002/0174/0175 59 48 B

AUTHORS: Vorob'yev, V. A.; Rudenko, V. N. 19

TITLE: Absorption of bremsstrahlung of a betatron in alkali-halide crystals of large thickness 21

SOURCE: IVUZ. Fizika, no. 2, 1965, 174-175

TOPIC TAGS: alkali halide crystal, bremsstrahlung, betatron radiation, bremsstrahlung absorption

ABSTRACT: The authors investigated the absorption of bremsstrahlung from a 30 MeV betatron in thick crystals of alkali halide salts. It is indicated that the most suitable samples for this purpose are those with small transverse dimensions, in which the thickness is several tens of times larger than the cross section, since this helps eliminate many secondary processes that distort the results of the experiment. The arrangement of the experimental apparatus and the experimental results are shown in Figs. 1 and 2 of the Enclosure.

Card 1/4

L 56322-65
ACCESSION NR: AP5011392

2

The mass coefficient of attenuation of bremsstrahlung from the 30 MeV betatron, determined on the basis of these experimental data(for the initial parts of the curves) is equal to 0.027, 0.029, and 0.032 cm^2/g for KCl, KBr, and KI crystals, respectively. The attenuation coefficient decreases with increasing crystal thickness, and increases slightly when the maximum quantum energy is decreased from 30 to 10 MeV. 'The authors are grateful to Professor A. A. Vorob'yev for guidance.' Original article has: 2 figures

ASSOCIATION: Tomskiy politekhnicheskiy institut imeni S. M. Kirova (Tomsk Polytechnic Institute)

SUBMITTED: 24Dec63 ENCL: 02 SUB CODE: SS, NP

NR REF SOV: 003 OTHER: 000

Card 2/4

L 58322-65

ACCESSION NR: AP5011392

ENCLOSURE: 01

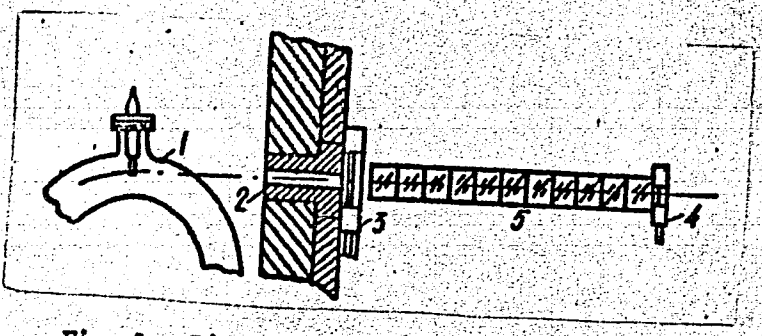


Fig. 1. Diagram of experimental set-up.

1 - Source, 2 - collimator, 3 - ionization chamber, 4 - sensitive volume, 5 - crystals

Card 3/4

L 58322-65
ACCESSION NR: AP5011392

ENCLOSURE: 02

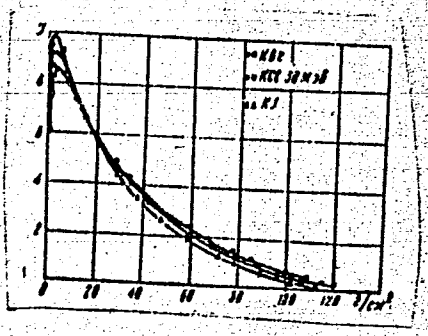


Fig. 2. Experimental results.

o o KBr
o o KCl, 30 MeV
▲ ▲ KI

Card 4/4

L 57516-65 EWP(e)/EWT(m)/EWP(w)/EWP(1)/EPF(n)-2/EWG(m)/EWA(d)/EPR/T/EWP(t)/EWP(k)/EWP(z)/EWP(b) Pf-4/Ps-4/Pu-4 IJP(c) JD/JG/AT/WH

ACCESSION NR: AR5013024 UR/0137/65/000/004/I073/I073

669.275.018.25

SOURCE: Ref. zh. Metallurgiya, Abs. 4I465

AUTHOR: Pisarenko, G. S.; Rudenko, V. N.; Borisenko, V. A.; Kashtalyan, Yu. A.; Kharchenko, V. K.

TITLE: Investigation of the high-temperature strength of refractory powder metal materials

CITED SOURCE: Tr. 7 Vses. nauchno-tekhn. konferentsii po poroshk. metallurgii. Yerrvan, 1964, 50-54

TOPIC TAGS: powder metallurgy, metal mechanical property, tungsten, niobium carbide

TRANSLATION: The strength, hardness and elastic characteristics of W and NbC up to 3300°K were studied using special equipment developed in the Institute of Powder Metallurgy and Special Alloys of the Academy of Sciences SSSR and the Institute of Powder Metallurgy of the Academy of Sciences UkrSSR. An intense drop in the sgrength of W begins at 1270°K. The strength of cast W is higher than that of pow-

Card 1/2

L 57516-65
ACCESSION NR: AR5013024 O

der metal W at 2270°K. The long-time hardness is in agreement with Shishokin's expression, $M = at^n$. The E modulus at 2470°K is 2.45×10^5 Mn/m^2. The G modulus at 1770°K is 1.8×10^5 Mn/m^2. The maximum bend strength of NbC is at a temperature of 0.5-0.6 of the melting point. The effect of porosity on strength decreases at high temperatures. The temperature dependence of E is presented. V. Kishinevskiy.

SUB CODE: MM ENCL: 00

Card 2/2

L 38103-65 EWT(1)/EWP(m)/EWG(v)/EEC(t)/T Po-4/Pe-5/Pq-4/Pg-4/Pae-2/P1-4 IJP(c)

GW

ACCESSION NR: AT5006353 S/3141/63/123/012/0096/0108

AUTHOR: Braginskiy, V. B.; Rudenko, V. N. 4/8 B+1

TITLE: Detection of gravitational effects 21

SOURCE: Kazan. Universitet. Uchenyye zapiski, v. 123, no. 12, 1963. Gravitatsiya i teoriya otnositel'nosti; tematicheskiy sbornik. (Gravitation and the theory of relativity), 96-108

TOPIC TAGS: gravity, relativity theory, astronomy, astrophysics

ABSTRACT: The authors state that only two of the predicted effects of the general theory of relativity--perihelion motion of Mercury, and deflection of starlight passing close to the sun--have been successfully detected by astronomical observation, the second with less than desirable accuracy. A third--frequency shift of electromagnetic radiation in a gravitational field--has been measured only in a weak field under circumstances allowing the possibility of other influences than gravitation. They note that despite great improvements in laboratory techniques in such fields as reduction of noise in electronic detecting instruments, attainment of low temperatures and high vacuums and statistical methods, there has been little experimental work on gravitational effects in the past forty years (exceptions are

Card 1/2

L 48103-65

ACCESSION NR: AT5006353 O

noted). Citing an equation of Lagrange, they state that if all its implications could be experimentally demonstrated it could be shown that the speed of propagation of gravitational effects is finite. They then suggest that the best initial approach to the demonstration of gravitational effects is the study of limitations on possibilities of measurements of small forces acting on test masses, starting from the level of experimental techniques already attained. Such possibilities and limitations are discussed under the following headings: 1) fluctuating forces acting on test masses; 2) evaluation of measurability of certain gravitational effects of the general theory of relativity in the short order and wave zones; 3) sources of gravitational radiation in laboratory conditions and of extraterrestrial origin; 4) gravitational effects not connected with the general theory of relativity. Analysis is primarily mathematical and theoretical, but a number of remarks are made on practical capabilities and limitations of measurement in the various fields. Orig. art. has 1 figure, 24 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: AA, GP

NO REF SOV: 014 OTHER: 015

Card 2/2

28 (5)

AUTHORS: Klimenko, V. N., Rudenko, V. N. 05750 SOV/32-25-10-39/63

TITLE: Prismatic Edges Made From a Chromium Carbide Alloy for High-temperature Bending Tests

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 10, p 1248 (USSR)

ABSTRACT: For bending tests at high temperatures (1000-1400°), in which the sample is heated by an electric current passing through it, the prismatic edges used for this purpose must have high resistivity to high temperatures, they must not oxidize, and must retain their high mechanical properties. The material of these prismatic edges must have good temperature- and electric conductivity and must retain its hardness and working temperature. Prismatic edges were produced from a metallo-ceramic alloy on the basis of chromium carbide. The alloy has the following properties: Resistivity to bending up to 1000° - 50 kg/mm^2, tensile strength at 1000° up to 20 kg/mm^2, resistance to compression at room temperature 250-300 kg/mm^2, hardness according to Vickers 1300° and at 1000° - 250 kg/mm^2. Electric conductivity at 20° $1.4 \cdot 10^4$ ohm^{-1}cm^{-1}, thermal conductivity

Card 1/2

05750

Prismatic Edges Made From a Chromium Carbide Alloy for High-temperature Bending Tests SOV/32-25-10-39/63

0.03 cal/cm. sec °C. The prismatic edges may be used for 300 high temperature tests without being re-ground.

ASSOCIATION: Institut metallokeramiki i spetssplavov Akademii nauk USSR (Institute of Cermets and Special Alloys of the Academy of Sciences of the UkrSSR)

Card 2/2

L 16720-65 EWP(m)/EWT(1)/EEC(t)/T Po-4/Pq-4/Pg-4/P1-4 IJP(c)/ESD(t)/ASD(p)-3

ACCESSION NR: AR5000758 S/0058/64/000/009/B009/B009

SOURCE: Ref. zh. Fizika, Abs. 9B91

AUTHORS: Braginsky, V. B.; Rudenko, V. N.

TITLE: Observable gravitational effects

CITED SOURCE: Uch. zap. Kazansk. un-t, v. 123, no. 12, 1963, 96-108

TOPIC TAGS: gravitation, general relativity, experimental physics

TRANSLATION: Experiments are proposed with which to verify under laboratory conditions the equations of general theory of relativity. The proposed experiments are based on the study of the gravitational interaction of a system of trial masses. A detailed analysis of the level of mechanical, electromagnetic, and gravitational noise that acts on the trial masses is made. It is shown that the values of some of the effects of general theory of relativity lie considerably above the level of this noise and can be registered

Card 1/2

L 16720-63
ACCESSION NR: AR5000758

under laboratory conditions at the present day status of experimental technique. Such effects are: change in the mutual attraction force between two rotating bodies, due to their rotation, change in the weight of a rotating body compared with the weight of a body having the same mass at rest, and many others. A Moskalve.

SUB CODE: GP

Encl: 00

2/2

BRAGINSKIY, V. B., RUDENKO, V. N., and RUKMAN, G. I.

"An Experimental Investigation of The Influence of an Intermediary Substance on The Gravitational Interaction"

report presented at the Intl. Conference on Relativistic Theories of Gravitation, Warsaw, Poland, 25-31 July 1962.

Physics Faculty of the Moscow State University, USSR.

BRAGINSKIY, V.B.; RUDENKO, V.N.; RUKMAN, G.I.

Experimental study of the effect of an intermediate medium on gravitational interaction. Zhur. eksp. i teor. fiz. 43 no.1:51-58 Jl '62. (MIRA 15:9)

1. Moskovskiy gosudarstvennyy universitet.
(Gravity—Measurement)

S/032/60/026/05/42/063
B010/B008

AUTHORS: Vereykina, L. L., Rudenko, V. N., Samsonov, G. V.

TITLE: Device for the Determination of the Ultimate Compressive Strength on Samples of Difficultly Fusible Compounds at High Temperatures

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 5, pp. 620-621

TEXT: The determinations mentioned in the title were carried out on a 30 t testing machine with a device described by V. G. Osipov (Ref. 1). The device (Fig. 1) was slightly modified by displacing the heating element and making it from VKZ-alloy. The heating of the sample is carried out by having the electric current passed directly through the heating element and the sample. If the tests are made at temperatures so high that oxidation takes place, a hollow ring is used and argon blown through. The ultimate compressive strength of titanium carbide, titanium boride, zirconium boride, chromium boride, and molybdenum disilide was carried out on samples which were obtained by hot pressing of the powders in graphite molds (Ref. 2). A diagram (Fig. 3) of the

Device for the Determination of the Ultimate Compressive Strength on Samples of Difficultly Fusible Compounds at High Temperatures

S/032/60/026/05/42/063
B010/B008

dependence of the ultimate compressive strength of the investigated, difficultly fusible compounds on the temperature is given. There are 3 figures and 3 Soviet references.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov Akademii nauk USSR (Institute of Powder Metallurgy and Special Alloys of the Academy of Sciences of the UkrSSR)

Card 2/2

37868

S/123/62/000/009/011/017
A052/A101

15 2416

AUTHOR: Rudenko, V. N.

TITLE: Investigation of short-time strength of metalloceramic heat-resistant materials

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 9, 1962, 39, abstract 9B178 ("Poroshk. metallurgiya", no. 4, 1961, 86-93, English summary)

TEXT: The effect of temperature and of a number of design-technological factors on the strength of metalloceramic materials on silicon carbide base was investigated. The composition of this material includes SiC, Si and SiO_2 and a material on chromium carbide base containing, besides chromium carbide, also nickel. Experimental samples were subjected to tensile and bending tests at 20 - 1,200°C, and also the effect of the scale factor was studied on samples of different dimensions. It has been established that the tensile and bending strength of strengthened silicon carbide increases with the increase of temperature up to 1,200°C. The bending strength is 2.5 times higher than the tensile strength. The strength of material on chromium carbide base with the increase of temperature to 950°C changes slightly. Material on silicon carbide and

Card 1/2

Investigation of short-time strength ...

chromium carbide base is affected by the scale factor. Metalloceramic material on silicon carbide base is less sensitive to stress concentration than material on chromium carbide base. Electromechanical processing of strengthened silicon carbide results in an increase of its strength at indoor and high temperatures by 50% on an average.

E. Spivak

[Abstracter's note: Complete translation]

Card 2/2

S 226/62/000/001/011/014
I003/I201

1/1600

Author Rudenko, V. N

Title INVESTIGATION OF THE TOUGHNESS OF METAL POWDER MATERIALS

Periodical *Poroshkovaya metallurgiya*, no. 1(7), 1962, 68–71

Text The toughness of silicon carbide-base and chromium carbide-base materials has been measured. The toughness of silicon carbide-base materials increases with increasing temperature in the range from 20°C to 1200 C The toughness of chromium carbide-base materials has its maximum between 850 °C and 900°C, after which it decreases. The toughness of silicon carbide-base materials increases with the dimensions of the tested samples, while the ratio of the work expended on destruction of the sample to its resisting moment does not depend on the dimensions of the cross section of the samples. There are 2 tables and 1 diagram.

1/B

Association Institut metallokeramiki i special'nykh splavov AN USSR (Institute of Powder Metallurgy and Special Alloys of the AS UkrSSR)

Submitted July 25, 1961

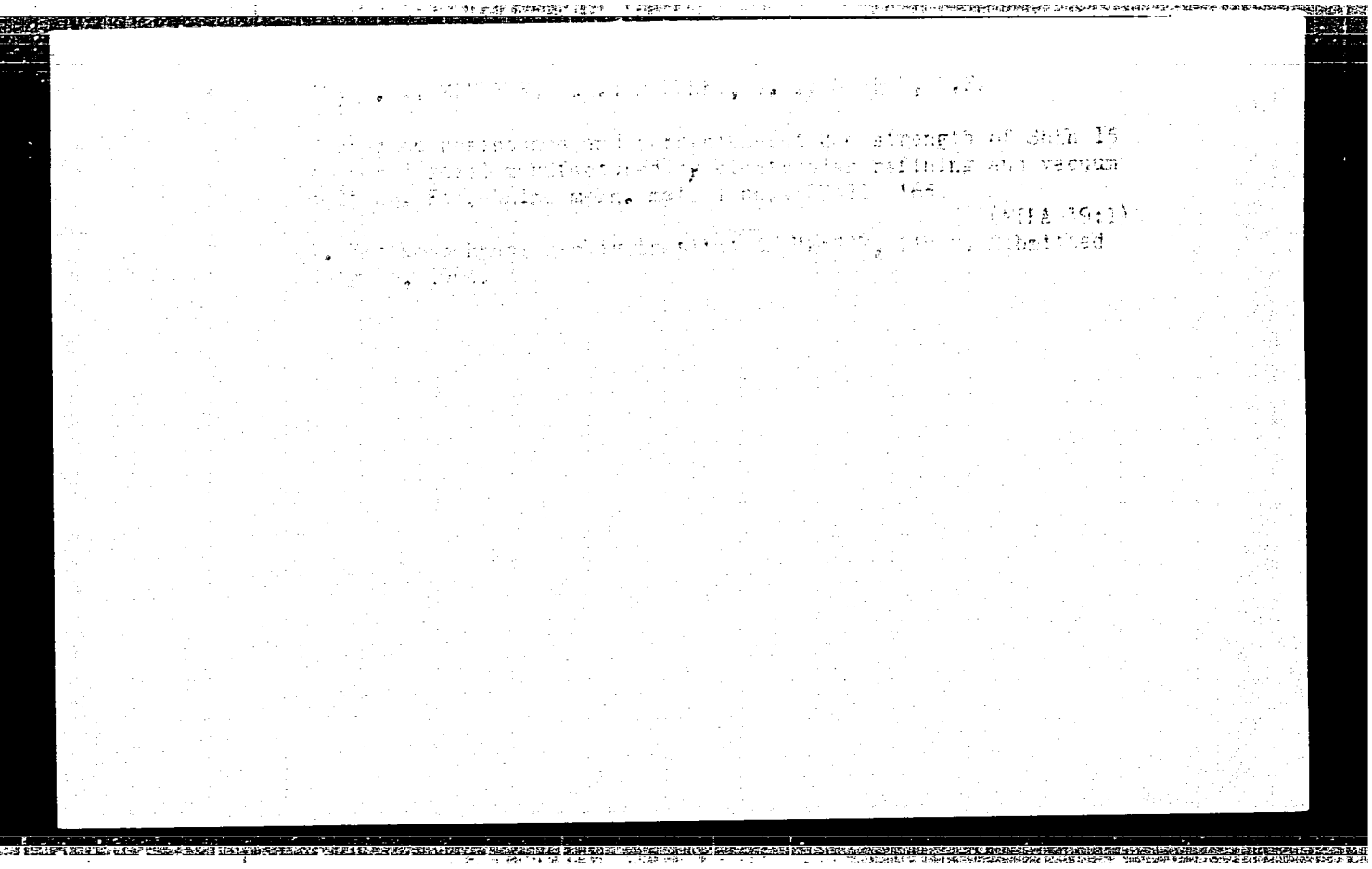
Card 1/1

BRAGINSKIY, V.B.; RUDENKO, V.N.

Detectable gravitational effects. Uch. zap. Kaz. un. 123 no.12:96-108 '63. (MIRA 17:11)

RUDENKO, V.O.

New laminated "tivvt" fabrics. Leh. prom. no.2:73-76 Ap-Je '63.
(MIRA 16:7)
1. Ukrainskiy nauchno-issledovatel'skiy institut tekstil'noy promyshlennosti.
(Textile fabrics) (Textile research)



SHULITE, Yu.A.; VOLCHOK, I.P.; IVNEV, V.V.; RUDENKO, V.P.

Effect of complex deoxidation on the physicomechanical properties of medium-carbon steel. Fiz.-khim. mekh. mat. 1 no.5:563-566 '65. (MIRA 19:1)

1. Mashinostroitel'nyy institut imeni Chubarya, Zaporozh'ye i Fiziko-mekhanicheskiy institut AN UkrSSR, L'vov. Submitted Feb. 25, 1965.

L 40906-65 EWT(m)/EWP(w)/EPF(c)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) MJW/JD/WB
ACCESSION NR: AP5009278 S/0369/65/001/001/0027/0031

31
30
B

AUTHOR: Kuslitskiy, A.B.; Mindyuk, A.K.; Rudenko, V.P.; Ryabov, B.F.

TITLE: Corrosion resistance and corrosion-fatigue strength of hardened ShKh 15 steel

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 1, 1965, 27-31

TOPIC TAGS: steel corrosion, steel fatigue strength, hardened steel, corrosion resistance, electroslag melting, electroslag refining, vacuum melting, shKh 15 steel

ABSTRACT: Comparative corrosion-resistance and corrosion-fatigue strength tests were made on samples of ball-bearing steel with different degrees of contamination by nonmetallic impurities and different densities. Six types of ShKh 15 steel (made by six different technological variants) were thus tested. A 3% NaCl solution was used as the corrosive medium. The corrosion resistance of electroslag and vacuum steels was found to be virtually the same and somewhat greater than that of the ordinary variety made in an open arc furnace. The 3% NaCl corrosive medium sharply decreased the cyclic strength of hardened steel. Steels subjected to electroslag remelting were found to be somewhat better in this regard. Fatigue tests on the six types of steel showed that the more aggressive the corrosive medium or more severe the testing conditions (preliminary

Card 1/2

L 40906-65
ACCESSION NR: AP5009278

corrosion of the samples), the smaller the difference in the properties of these types, i.e., the less they differed from one another. Orig. art. has: 3 figures.

ASSOCIATION: FMI AN Ukr SSR, Lvov

SUBMITTED: 20Jul64 ENCL: 00 SUB CODE: MM

NO REF SOV: 006 OTHER: 000

Card 2/2

RUDENKO, V. S. Cand Tech Sci -- (diss) "Study of ~~the emergency~~ breakdown conditions of mercury converters, ~~executed according to the chart: Stars — straight lines, and reciprocals of stars~~ rectifiers connected in zig-zag with ~~leveling off~~ compensating coils and ~~switch~~ commutating condensers."

Kiev, 1957. 14 pp with diagrams (Min of Higher Education UkSSR. Kiev Order of Lenin Polytechnic Inst. Chair of Theoretical Bases of Electrical Engineering), 100 copies (KL, 13-58, 97)

CHIZHENKO, I.M.; RUDENKO, V.S.

Devices used for observation of processes in studying arc backs in current converter installations. Izv. KPI 22:279-284 '57.
(Electric current converters) (MIRA 11:3)

CHIZHENKO, I.M.; RUDENKO, V.S.

Conditions of arc backs in current conversion circuits with direct and inverse star connections, ground equalizers, and switching capacitors. Izv. KPI 22:285-295 '57. (MIRA 11:3)
(Electric current converters)

CHIZHENKO, I.M.; RUDENKO, V.S.

Backfire conditions in powerful mercury current converters. Izv. KPI 26:171-189 '57. (MIRA 11:6)

1.Kafedra teoreticheskikh osnov elektrotekhniki Kiyevskogo politekhnicheskogo instituta.
(Mercury-arc rectifiers)

CHIZHENKO, I.M.; RUDENKO, V.S.

Processes in current converters with switching devices during the omission of ignition. Izv. KPI 26:191-202 '57. (MIRA 11:6)

1.Kafedra teoreticheskikh osnov elektrotekhniki Kiyevskogo politekhnicheskogo instituta.
(Mercury-arc rectifiers)

9(4) SOV/112-59-5-9888

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 5, p 208 (USSR)

AUTHOR: Chizhenko, I. M., and Rudenko, V. S.

TITLE: Phenomena in a Compensation Mercury-Arc Rectifier Unit Under Fault Conditions

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Energetika, 1958, Nr 3, pp 16-24

ABSTRACT: Investigation of the rectifier "star - direct and reverse stars with equalizing reactors and firing-angle capacitors" is reported. Short-circuits on the rectified-current side, arc-backs, and misfirings were studied. Through the investigation of short-circuits and arc-backs, a possibility was found to apply the classical method of calculating transients, in which the valves are considered as automatic breakers that close and open various branches of the circuit. Under short-circuit conditions the valves operate at almost 360°, the currents in 2-phase and 3-phase equalizing reactors are constant, and the voltages on the reactors are zero. The voltage on the capacitors connected to

Card 1/2

SOV/112-59-5-9888

Phenomena in a Compensation Mercury-Arc Rectifier Unit Under Fault Conditions

3-phase equalizing reactors is also negligible. A set of equations that include maximum possible currents in the circuit under short-circuit conditions is presented. The arc-back current increases passing zero several times; this fact is favorable for operation of a protective system. Thanks to several current zeros, many arc-backs would eliminate themselves. A misfiring in an isolated rectifier can cause overvoltages on various circuit components. By selecting proper parameters for 2- and 3-phase equalizing reactors, the overvoltages can be reduced to a tolerable value. When rectifiers operate in parallel, the misfirings result in a self-dropping of load by the faulty unit, and no overvoltage on that unit appears.

L.S.R.

Card 2/2

05624

15.2142
15.2210

S/078/60/005/012/010/016
B017/B064

AUTHORS: Godina, N. A., Keler, E. K., and Rudenko, V. S.

TITLE: Reaction of Hafnium Dioxide With Titanium Dioxide

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 12, pp. 2795-2797

TEXT: The solid-phase reaction in heating mixtures of hafnium dioxide and titanium dioxide was studied. HfO_2 had a purity of 99%, and TiO_2 a purity of 99.7%. The oxide mixtures were pressed to tablets under a pressure of 500 kg/cm^2, and burned at 1350 - 1650°C. The burned samples were subjected to an X-ray phase analysis. Fig. 1 shows the X-ray pictures of the mixtures of 50% HfO_2 + 50% TiO_2 and the combustion product of this mixture obtained at 1650°C. Hafnium titanate $HfTiO_4$ forms in the reaction of HfO_2 with TiO_2. Fig. 2 compares the X-ray pictures of zirconium titanate and hafnium titanate. The X-ray pictures of hafnium titanate obtained at 20, 1200, and 1400°C are given in Fig. 3. The solubility of TiO_2 in HfO_2

Card 1/2

85626

Reaction of Hafnium Dioxide With Titanium Dioxide

S/078/60/005/012/010/016
B017/B064

is limited, at 20% TiO_2 the X-ray picture shows the intensive lines characteristic of hafnium titanate. The dependence of the lattice spacings of the HfO_2 lattice on the TiO_2 concentration, and the dependence of the lattice spacings of the TiO_2 lattice on the HfO_2 concentration were studied. The results are graphically shown in Figs. 4 and 5. Apart from hafnium titanate, solid solutions form in the system HfO_2 - TiO_2. The limit of the solid solution of TiO_2 in monoclinic HfO_2 lies at 12 to 13 mole % of TiO_2. At 1600°C, the solubility of HfO_2 in TiO_2 is ~ 15 - 16 mole %. There are 5 figures, 1 table, and 3 references: 1 Soviet and 2 US.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry of the Academy of Sciences USSR)

SUBMITTED: September 1, 1959

Card 2/2

29514
S/062/61/000/011/001/012
B119/B138

15.2220

AUTHORS: Leonov, A. I., Rudenko, V. S., and Keler, E. K.

TITLE: Reaction between Ce_2O_3 and SiO_2 at high temperatures

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 11, 1961, 1925-1933

TEXT: Silicates of trivalent Ce were synthesized in a hydrogen atmosphere, as Ce_2O_3 is unstable in an oxygen-containing atmosphere. 99.1% CeO_2 and analytically-pure SiO_2 were made to react between 1200 and 1650°C in the molecular ratios Ce_2O_3:SiO_2 = 2:1, 1:1, 2:3, 1:2, 1:4, and 1:8. The calcined products were analyzed by the X-ray diffraction method. The Ce_2O_3 X-ray diffraction pattern was interpreted on the basis of data by B. F. Ormont (Ref. 5: Struktura neorganicheskikh veshchestv. (Structure of Inorganic Substances) M.-L., 1950, str. 455). The refractive index, dielectric constant, dielectric loss (these two measured by I. S. Yanchevskaya),

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29514
S/062/61/000/011/001/012
B119/B138

Reaction between Ce_2O_3 and SiO_2 at ...

and specific weight were also determined. To identify the products yielded, they were oxidized by heating in air and their oxygen absorption was gravimetrically determined. (The individual Ce^{III} silicates have different decomposition temperatures on heating in air.) Results: The compounds $Ce_2O_3 \cdot SiO_2$, $2\ Ce_2O_3 \cdot 3\ SiO_2$, and $Ce_2O_3 \cdot 2\ SiO_2$ could be proved. Crystalline $Ce_2O_3 \cdot 2\ SiO_2$ was obtained from an initial mixture of $1\ Ce_2O_3 + 2\ SiO_2$. $Ce_2O_3 \cdot SiO_2$ and $2\ Ce_2O_3 \cdot 3\ SiO_2$ are unstable and could not be obtained from their stoichiometric initial mixtures in a purely-crystalline phase. The decomposition temperatures in air are between 300 and 500°C for $Ce_2O_3 \cdot SiO_2$, between 600 and 700°C for $2\ Ce_2O_3 \cdot 3\ SiO_2$, and at 900°C for $Ce_2O_3 \cdot 2\ SiO_2$. Among others, papers by N. A. Toropov and I. A. Bondar' (Ref. 1: Izv. AN SSSR, Otd. khim. n. 1959, 554) and I. A. Bondar' (Ref. 1: Sb. "Khimiya i prakticheskoye primeneniye silikatov", L., 1960, str. 5-9) are mentioned. There are 6 figures, 8 tables, and 5 references: 2 Soviet and 3 non-Soviet. The two references to English-language publications read as follows:

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S/062/61/000/011/001/012
B119/B138

Reaction between Ce_2O_3 and SiO_2 at ...

I. Warshaw, R. Roy, Amer. Ceram. Soc. Bull. 38, N 4, 169 (1959); Alphabetical and Numerical Indexes of X-Ray Diffraction Patterns. ASTM, 1953.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry of the Academy of Sciences USSR)

SUBMITTED: May 22, 1961

X

Card 3/3

CHIZHENKO, I.M., kand.tekhn.nauk; RUDENKO, V.S., kand.tekhn.nauk; NEMIROVSKIY, A.Sh., inzh.

Inverse firing conditions in large power converters with multiple rectifiers and a commutating device. Prom. energ. 16 no.8:36-40 Ag '61. (MIRA 14:9)
(Electric substations) (Electric current rectifiers)

L 17125-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3000983 S/0149/63/000/002/0152/0156

AUTHORS: Pul'tsin, N. M.; Rudenko, V. S. 54

TITLE: Variation of hardness with depth in an altered layer of titanium alloys 27

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 2, 1963, 152-156

TOPIC TAGS: titanium alloy, surface layer, hardness variation

ABSTRACT: The variation of hardness in the surface layer of a binary titanium alloy (4% Cr) was studied experimentally. It was established that hardness distribution with depth follows basically the logarithmic law. The observed hardness variation was correlated with the diffusion of admixtures in this layer. Graphical and analytical investigations proved that the relations of admixture concentrations and of hardness to the depth were analogous. A simple experimental method for determining the coefficient of admixture diffusion within the altered (surface) layer and the time interval of the alloy soaking at given temperature is presented. A formula is also derived for the relation between the thickness of the altered layer and the length of soaking time at given temperature. These relations for temperatures 750, 850 and 900C are shown on Fig. 1 in enclosure. Orig. art. has: 6 figures and 7 formulas.

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DOROKHOV, Aleksandr Petrovich; KOROBKINA, Galina Stepanovna; STARODUBTSEV, Viktor Aleksandrovich; TSARENKO, Vladimir Timofeyevich; VOLKOV, A.A., retsenzent; OGORODNEYCHUK, I.F., retsenzent; RUDENKO, V.S., retsenzent; TETEL'BAUM, Ya.I., retsenzent; FILONENKO, S.N., dots., otv. red.; NESTERENKO, A.S., red.

[Principles of industrial electronics] Osnovy promyshlennoi elektroniki. [By] A.P.Dorokhov i dr. Khar'kov, Izd-vo Khar'kovskogo univ., 1964. 214 p. (MIRA 17:8)

CHEREVKO, G.P., inzh.; BEVZ, A.N., inzh.; [illegible], V.S., inzh.

Technology of production is improving. TSement 30 no.3:18-19 My-Je '64. (MIRA 17:11)

1. Bakhchisarayskiy kombinat stroitel'nykh materialov.

L 46185-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EPR/T/EWP(t)/EWP(b)/EWA(c) Pr-4/
Ps-4/Pu-4 IJP(c) JD/WW/JG

ACCESSION NR: AP5007561 S/0020/65/160/005/1065/1068

AUTHOR: Boganov, A. G.; Rudenko, V. S.; Makarov, L. P.

TITLE: X-ray diffraction study of zirconium dioxide and hafnium dioxide at temperatures up to 2750°C

SOURCE: AN SSSR. Doklady, v. 160, no. 5, 1965, 1065-1068

TOPIC TAGS: zirconium dioxide structure, hafnium dioxide structure, x ray diffraction analysis, polymorphism

ABSTRACT: X-ray diffraction studies of the polymorphism of ZrO_2 and HfO_2 were made by using a high-temperature x-ray camera which the authors designed and which was mounted on a URS-50-IM ionization diffractometer. During heating of anhydrous ZrO_2, a reversible monoclinic ⇄ tetragonal polymorphic transformation was observed in the 1100-1200°C range. Subsequent heating to about 2300° revealed a second, tetragonal ⇄ cubic transformation. The stabilized high-temperature cubic form of ZrO_2 at 2330° has a fluorite-type lattice with parameter $a = 5.256 \pm 0.003$ Å. In the case of HfO_2, the presence of a reversible monoclinic ⇄ tetragonal polymorphic transformation was established at 1900-2000°. A second transformation similar to

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ACCESSION NR: AP5007561

the tetragonal ⇄ cubic transformation of ZrO_2 could be recorded only at very high temperatures close to the melting point of HfO_2 (the melting point was estimated to be 2700-2750° from the power dissipated in the sample by the electron beam used to produce these high temperatures). This transformation is also reversible in HfO_2. The lattice parameter of the cubic modification at 2750° is ∿5.300 ± 0.010 Å. It is concluded that for pure ZrO_2 and HfO_2, the following crystalline modifications are stable: monoclinic from room temperature to 1150° for ZrO_2 and 1950° for HfO_2; tetragonal from 1150 and 1950° to 2300 and 2700° respectively, and face-centered cubic from 2300 for ZrO_2 and 2700 for HfO_2 up to the melting points. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Institut khimii silikatov im. I. V. Grebenshchikova Akademii nauk SSSR (Institute of Silicate Chemistry, Academy of Sciences SSSR)

SUBMITTED: 08Aug64 ENCL: 00 SUB CODE: IC, OP

NO REF SOV: 004 OTHER: 002

me
Card 2/2

L 45190-65 EWT(l)/EWP(e)/EWT(m)/EPF(c)/EPF(n)-2/EWG(m)/EPR/T/EWP(t)/EWP(b)/EWA(c)
Pr-4/Ps-4/Pu-4 IJP(c) JD/WW/JG/AT/WH

ACCESSION NR: AP5010160 UR/0020/65/161/002/0332/0335

AUTHOR: Boganov, A. G.; Makarov, L. P.; Rudenko, V. S.

TITLE: X-ray camera to operate at temperatures up to 2500° for diffractometers with ionization registration

SOURCE: AN SSSR. Doklady, v. 161, no. 2, 1965, 332-335

TOPIC TAGS: x ray camera, x ray diffraction, high temperature research

ABSTRACT: The article describes a high temperature vacuum x-ray camera, developed and constructed by the authors at Institut khimii silikatov AN SSSR (Institute of Chemistry of Silicates, AN SSSR). The camera and its vacuum system are shown in Figs. 1 and 2 of the Enclosure. The camera is intended to operate at high temperatures, using a tungsten radiation heater for temperatures up to 2000° and electron bombardment for higher temperatures. At maximum temperature the anode voltage is usually not more than 3.5--4 kV, and the emission current is smaller than 1000 mA. The camera and its operation are described in detail. It was used for high temperature research on high melting point oxides of group III and IV elements. Typ-

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ACCESSION NR: AP5010160

ical x-ray patterns of ZrO_2 and HfO_2 obtained at 2300 and 2400, using CuKα radiation (40 kV, 10 mA) through a nickel filter are presented by way of an example. The equipment can be modified to operate at 3000°. This report was presented by V. A. Kirillin. Orig. art. has: 3 figures.

ASSOCIATION: Institut khimii silikatov im. I. V. Grebenshchikova Akademii nauk SSSR (Institute of Chemistry of Silicates, Academy of Sciences, SSSR)

SUBMITTED: 08Aug64 ENCL: 02 SUB CODE: OP

NR REF SOV: 000 OTHER: 010

Card 2/4

L 53916-65 EWG(j)/EWT(m)/EPF(c)/EPR/I/EWP(t)/EWP(b)/EWA(c) Pr-4/Ps-4 IJP(c)
ACCESSION NR: AP5010580 JD/JG UR/0020/65/161/003/0590/0593

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29
B

AUTHOR: Boganov, A. G., Rudenko, V. S.

TITLE: Nature of the irreversible polymorphic transformations of rare earth oxides

SOURCE: AN SSSR. Doklady, v. 161, no. 3, 1965, 590-593

TOPIC TAGS: rare earth oxide, oxide polymorphic transformation, oxide crystal structure, x-ray diffraction, high temperature transition, sesquioxide reduction

ABSTRACT: To determine the existence of high-temperature polymorphic transformations in the oxides of Pr, Nd, Sm, Gd, Tb, and Dy, the authors carried out x-ray diffraction studies with a special vacuum x-ray camera at 2200-2300C. In addition, the weight loss in the region of the transition point was measured, the influence of the gas medium (oxidizing, reducing, vacuum) and its pressure on the transition temperature was studied, and chemical analysis for "excess" oxygen (above the sesquioxide ratio 2:3) was performed iodometrically. The temperature of the C → A transition for Pr_2O_3 varies between 700 and 1350C as a function of the medium and in such a way that the structural change for compositions of this oxide which are close to the sesquioxide value is directly related not only to the thermodynamic conditions, but to the change in the composition of the compound; in this sense, the C → A transformation in Pr_2O_3 cannot be considered a

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ACCESSION NR: AP5010580

true polymorphic transformation. In Nd_2O_3, Sm_3O_3, and Gd_2O_3, the transformations from C to A and B forms are related to their partial reduction to a composition with an oxygen content lower than the sesquioxide value. The distinctly reversible nature of the transformations in Tb_2O_3 and Dy_2O_3 and their irreversible character in Pr_2O_3, Nd_2O_3, Sm_2O_3, and Gd_2O_3 are thought to have the same fundamental cause associated with slight changes in composition occurring in rare earth oxides in the transition range during heating. Orig. art. has: 3 figures.

ASSOCIATION: Institut khimii silikatov im. I. V. Grebenshchikova Akademii nauk SSSR (Institute of Silicate Chemistry, Academy of Sciences SSSR)

SUBMITTED: 01Oct64 ENCL: 00 SUB CODE: IC

NO REF SOV: 001 OTHER: 006

Jac Card 2/2

L 23791-66 EWP(e)/EWT(m) WH

ACC NR: AP6007260 (A) UR/0363/66/002/002/0363/0375

AUTHOR: Boganov, A.G.; Rudenko, V.S.; Bashnina, G.L.

ORG: Institute of Silicate Chemistry im. I.V. Grebenshchikov, AN SSSR (Institut khimii silikatov AN SSSR)

TITLE: The laws governing the crystallization and nature of quartz glass

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v.2, no.2, 1966, 363-375

TOPIC TAGS: glass property, crystallization, quartz glass, glass crystallization

ABSTRACT: A study was made of the process of crystallization of industrial domestic quartz glass. The crystallization took place at a temperature of 1300°C in an air atmosphere. The heating time usually did not exceed 10 to 15 hours. It was established that the crystallization takes place from the surface. Microphotos of various samples are given. Crystallization in a vacuum not only slows down the process, but takes place with a holding time of 30 to 50 hours and a temperature of 1300°C. Analysis of the experimental data, as well as later foreign experimental results, leads to the conclusion that quartz glass is always a non-stoichiometric product. This fact, plus the strictly covalent nature of the bonds explains the nature of the glassy state of silicon dioxide. Orig.

Card 1/2 UDC: 666.1:542.65

L 23791-66

ACC NR: AP6007260

art. has: 7 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 01Jul65/ ORIG REF: 002/ OTH REF: 020

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L 46971-66 EWP(k)/EWT(m)/EWP(t)/ETI IJP(c) JH/WW/JD/HW/JG

ACC NR: AT6024944 (A,N) SOURCE CODE: UR/2981/66/000/004/0296/0302

AUTHOR: Rutman, M. M.; Cherepok, G. V.; Rudenko, V. S.

ORG: none

TITLE: Effect of furnace lining on the silicon content of deformable aluminum alloys

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 296-302

TOPIC TAGS: refractory, aluminum silicate, aluminum zinc alloy, magnesium containing alloy

ABSTRACT: The reaction between liquid aluminum alloys and aluminosilicate refractories used for furnace linings was studied by determining the effect of the composition of alloys of Al-Zn, Al-Mg, and Al-Zn-Mg systems on the depth of penetration of silicon into the alloys after a 20-hr contact at 750°C. The extent of this reaction was found to depend on the composition of the alloy. Small admixtures of certain elements (Be, Mn, Li), substantially affect the extent and nature of the reaction between the melt and the aluminosilicate lining. A rise in the temperature of the melt increases the rate of the reaction of all the alloys with the lining; a particularly pronounced increase in the extent of the reaction is observed in the case of aluminum alloys containing magnesium or magnesium and zinc. A classification of deformable aluminum

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ACC NR: AT6024944

alloys is proposed, and the use of certain types of refractories for various alloy groups is recommended. Orig. art. has: 4 figures.

SUB CODE: 11/ SUBM DATE: None

Card 2/2

ACC NR: AP6018560 SOURCE CODE: UR/0181/66/008/006/1910/1918

AUTHOR: Boganov, A. G.; Cheremisin, I. I.; Rudenko, V. S.

ORG: Institute of Chemistry of Silicates im. I. V. Grebenshchikov, Leningrad (Institut khimii silikatov)

TITLE: Development of a direct method for calculating the electrostatic energy of ionic lattices

SOURCE: Fizika tverdogo tela, v. 8, no. 6, 1966, 1910-1918

TOPIC TAGS: crystal lattice structure, ionic crystal, crystal unit cell, ion energy

ABSTRACT: In view of a new interpretation offered by the authors earlier (DAN SSSR v. 161, 590, 1965) for the mechanism and nature of irreversible polymorphic transformations of oxides, they calculate here the energies of cubic (C-PrO_3, C-Pr_2O_3) and hexagonal (A-Pr_2O_3, α-Al_2O_3) lattices of such oxides, using the direct summation method proposed by H. M. Evjen (Phys. Rev. v. 39, 675, 1932). Inasmuch as the Madelung constants for these lattices have not been published in the past, they had to be calculated in this work. In addition to giving the different values of the ion energies, the authors present lattice plans and unit-cell diagrams of the crystals, and a tentative scheme for the coordination environment of the oxygen ions in the A-Pr_2O_3 lattice. In all cases, the summation method employed gave good convergence of the potential in the center of the cell (with increasing cell) and the accuracy was adequate for practical purposes. Orig. art. has: 6 figures, 4 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 12Jul65/ ORIG REF: 003/ OTH REF: 007

Card 1/1

RUDENKO, V.T.

Results of the Scientific and Technical Conference of the Polish Society of Engineers and Technicians of the Sugar Industry on problems of automatic control (from "Przemyset Spozywcay," No.9, 1958). Sakh.prom. 33 no.7:72-73 Jl '59.
(MIRA 12:11)

(Sugar manufacture--Congresses)
(Automatic control)